

Agenda

■ Opportunities

■ Threats

■ Product "Holes" Today

■ 5 Options

■ Recommendations

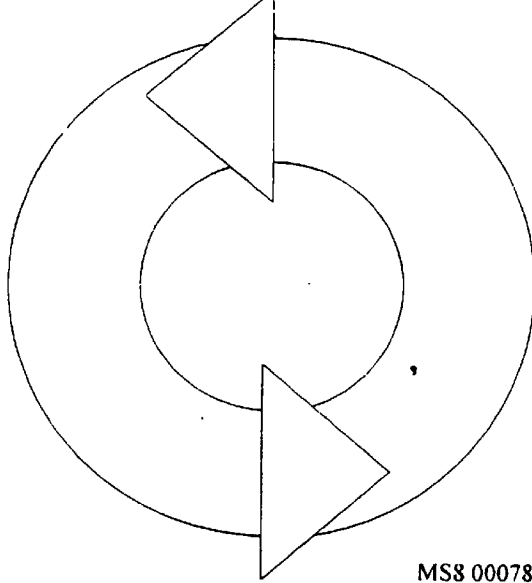


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Systems Opportunity: Paradigm Shift

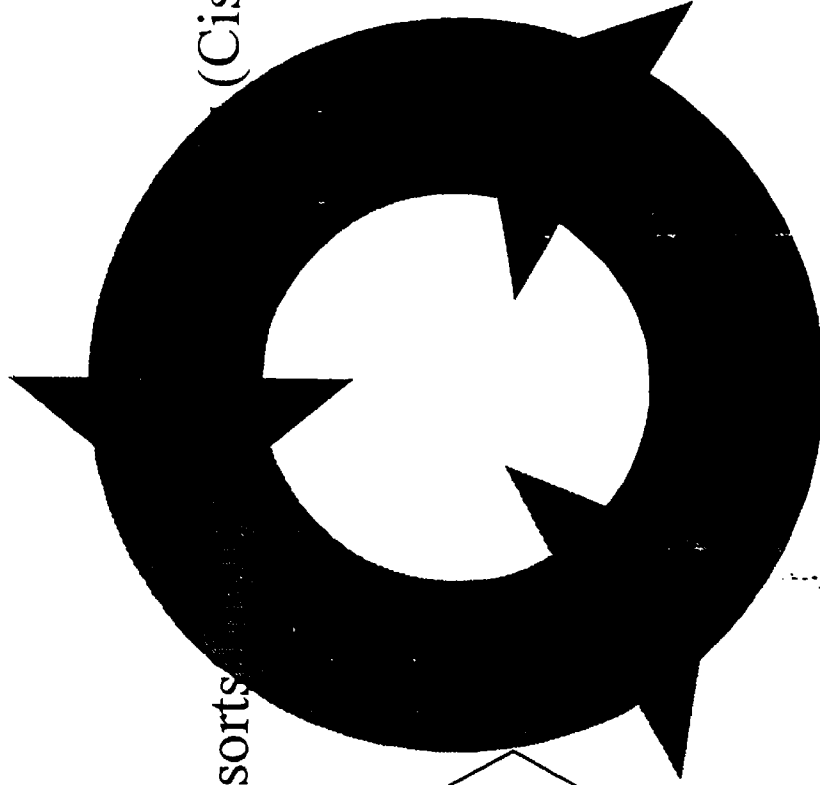
*A Shift In Paradigms Is Happening—Moore's Law will
be applied to Networks*

Processors (Intel)



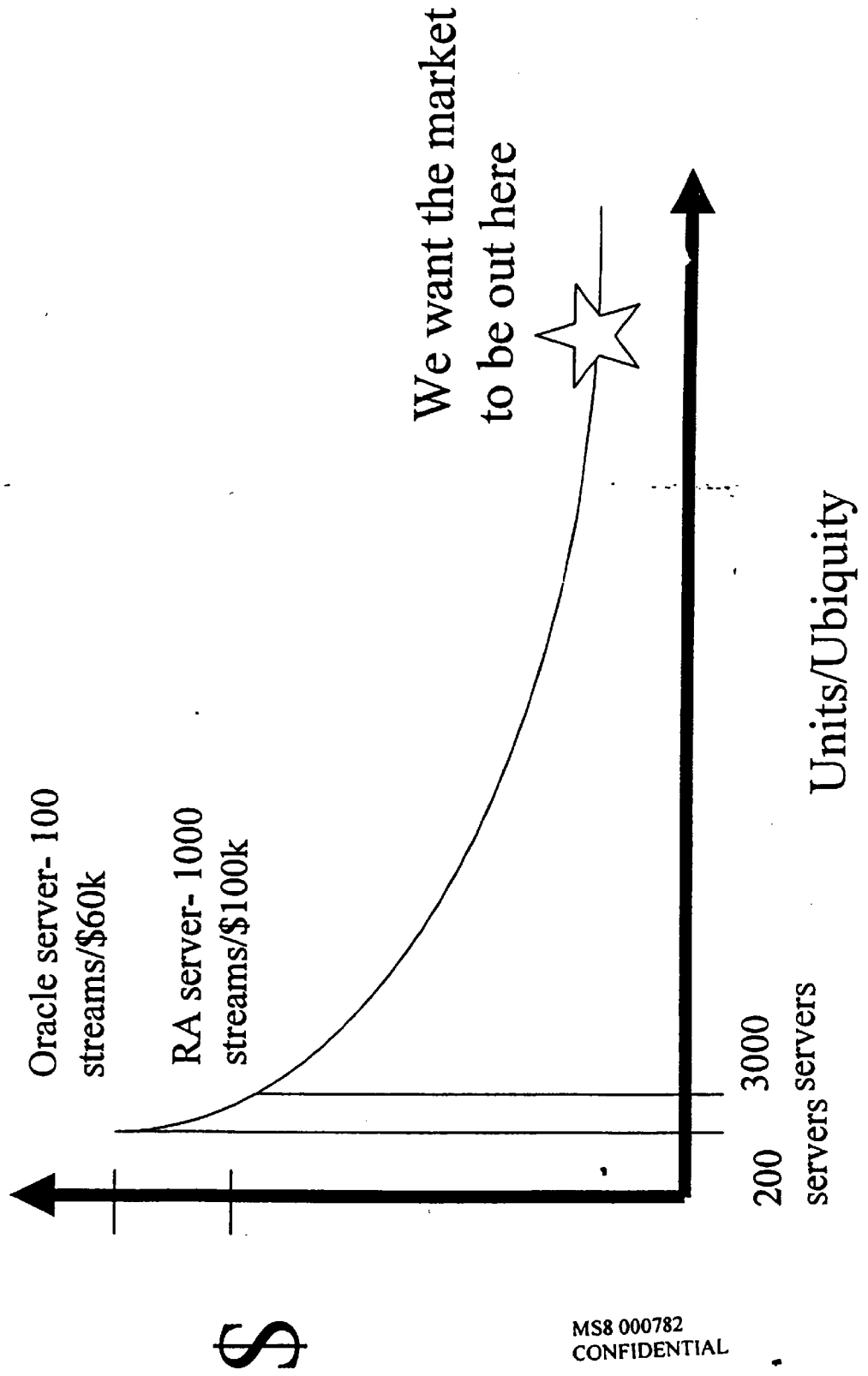
Software (Microsoft)

Processors (Cisco)



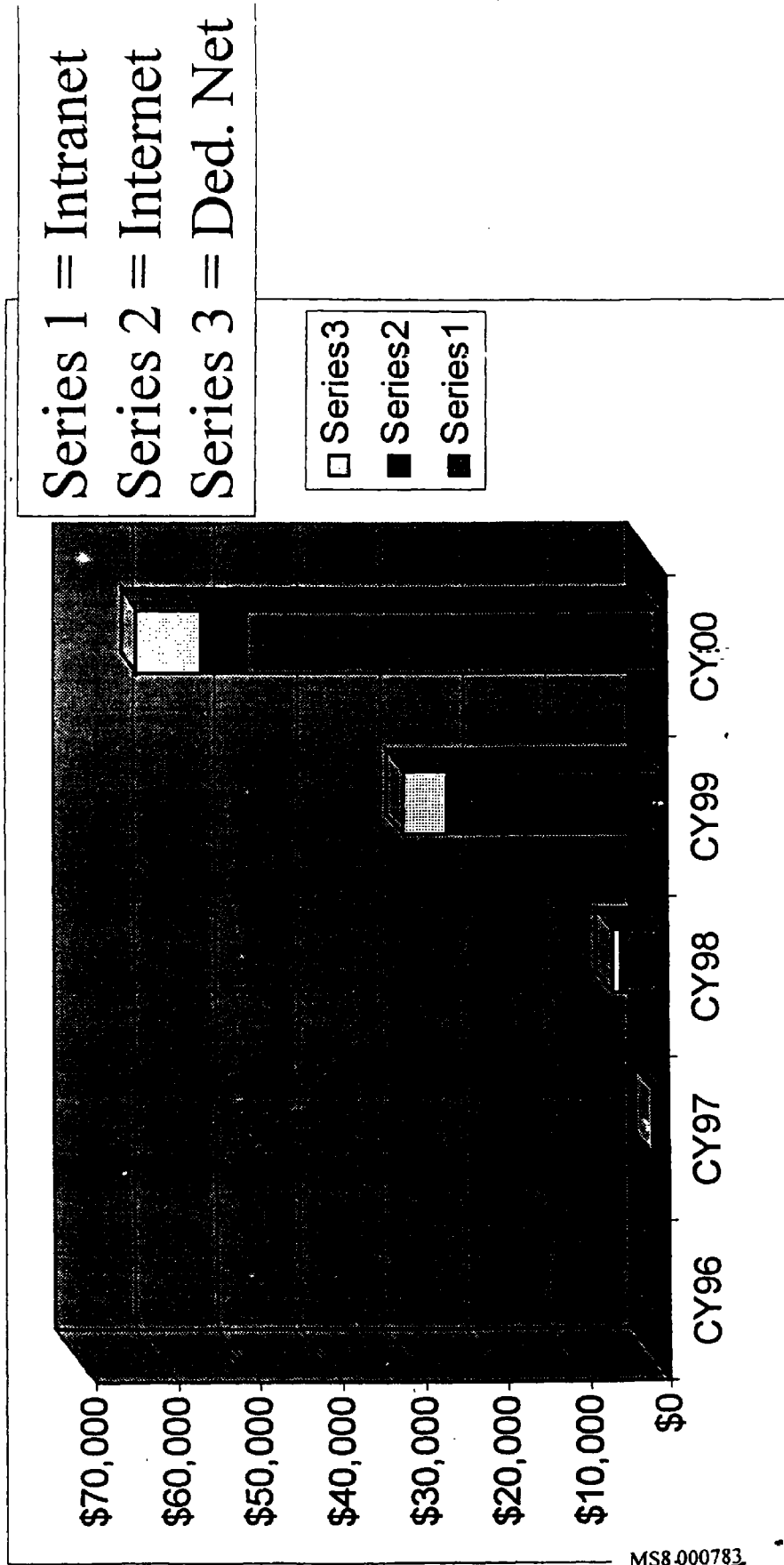
Software (Microsoft)

Systems Opportunity: Multimedia Ubiquity



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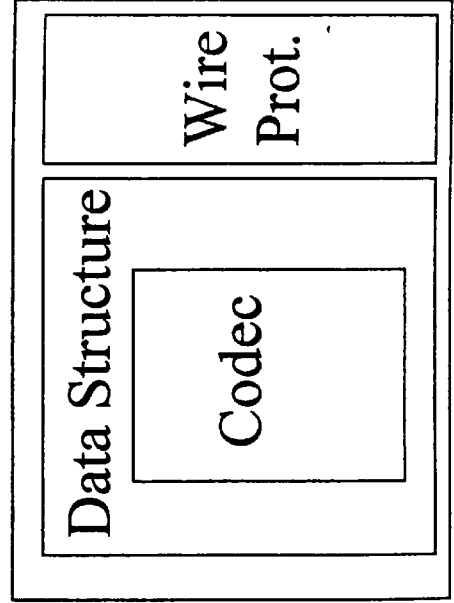
Product Opportunity: MS NetMM Servers (in 000's)



Threats: File Format

- The Windows API of the Internet is controlled by PN/Netscape
- Content is going into a format we don't control
- File formats on the Web <> file formats on the desktop - no other vendor can play
- Giving PN/Netscape control, gives them control of what tools do and what media types get streamed

Streaming File Format



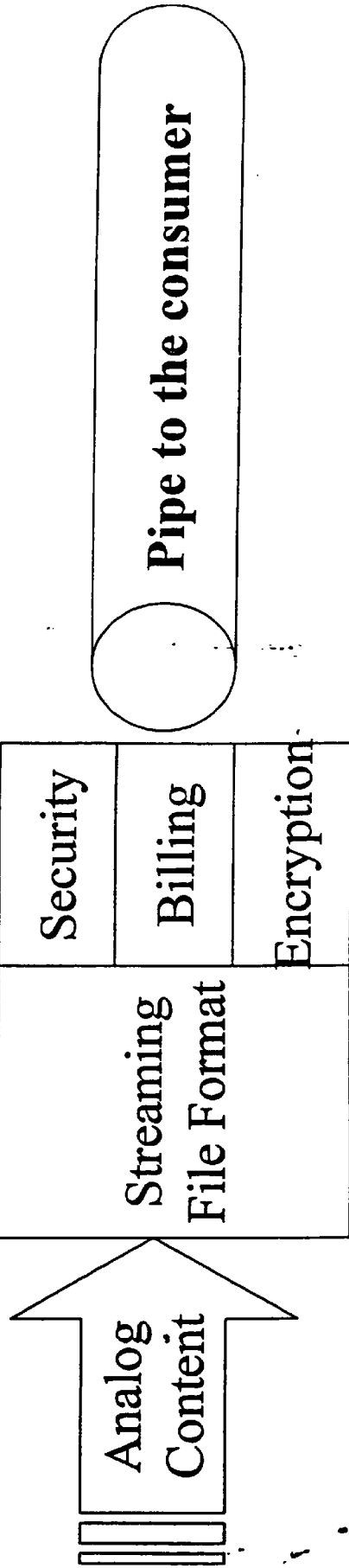
- Virtually impossible to reverse engineer
- Virtually impossible to build converters/readers
- Easy to change

Threats: Interoperability & Fragmentation

- There are 15 vendors fragmenting the market
- There is NO interoperability story between them
- Each one has different file formats, codecs, wire protocols, and in some cases data types
- It's easy to build streaming engines, file formats, and multicast engines that are incompatible
- Yet there are no tools for admin, content management, content creation, billing, etc.
- The market needs a COMPLETE solution

Threats: The game is over at 56.6 kbps

- At 56.6 kbps and with QoS, quality audio and video is possible (ie, you can now CHARGE for it, ala MSNBC)
- Whoever owns the technology that's used to bring analog content to the Web will also own Security, Encryption, and Billing API's and technology decisions
- Whoever owns the content will own the consumer eyeballs
- RISK: PN &/or Netscape continue current momentum



Threats: Networked MM Is Not A Platform Issue, It's a COMPLETE SOLUTIONS Issue

- **Examples**
 - MS ITG took 8 months to roll out multicast due to lack of network admin utilities
 - All routers shipped in last year support multicast (many RSVP) but it's not turned on
- **Overcoming objections to Networked MM is a major obstacle**
- **We can seize the lead with a single, working end to end solution**
 - Client, server, tools, admin, deployment capabilities, and content aggregation

NetShow "Holes" Today

- Standards Support
 - Need to move the entire product to RTP/RTCP
 - Need to move the control protocol to RTSP
 - Radically step up ASF evangelism and make it a standard
- Cross Platform Story (client & server)
 - Need Unix servers to be competitive
 - Need Mac, Win 3.1, Unix, and Netscape Plug-in clients

NetShow "Holes" Today

- **Codecs**
 - Implement a backchannel "tuneable" codec architecture
 - License existing best of breed codecs (most frequent selection criteria: sound & picture quality)
- **Tools**
 - Mac tools needed to be a contender
 - Need to resource (or build a better) Winase particularly for multicast
- **Management**
 - Admin, content management, network management tools needed
 - Particularly lacking multicast management tool set

NetShow "Holes" Today

- **Distribution & Production**
 - Need ready-made production and distribution channel (ala Timecast and Audionet for PN)
 - AMAZING low hanging fruit just taking analog content to the digital world (radio, tv, events)
 - Multicast and unicast bandwidth purchase
- **Big Content Deals**
 - Lacking focus and resources necessary to close content deals with major players
 - DRG not staffed
- **Sales force**
 - PN and Netscape have dedicated media server sales force

Current Strategy Is Failing

- NetShow as a "feature" of IIS and IE
 - Becomes a "pimple on the elephant"--no focus
 - Media Server space and HTTP client/server space are not completely the same (multimedia)
 - Dropped from IE 4.0 typical install at one point! (so we're not even an IMPORTANT feature!)
- NetShow as a "platform", not an app
 - Forced to position and be "friendly" to the competition--Netscape, PN
 - As a result, no one is considering our product vs. PN's/Netscape's
- NetShow for free
 - Corporate sales force not pushing "free things" without a lot of prodding
 - Leaving money on the table

Need Radical New Strategy To Seize Lead

- **Goal: 50% marketshare by YE '97**
- **Build product we can charge for**
- **Build complete solution (not just pieces)**
- **Seize lead in standards efforts in this space**
- **Metrics to measure we've "arrived"**
 - ! **Need to get to 2 M clients/month**
 - ! **We need to either ship 150k free servers/6 mo.**
 - ! **Or we need to ship at least 1500 for fee servers/mo.**

Five Options

- Option 1: Buy PN
- Option 2: Industry-shaking Acquisitions
- Option 2a: With Cisco JV
- Option 3: Turn Dial To "11"
- Option 4: Focus On 56.6 and above
- Option 5: Pull Back To Systems Components

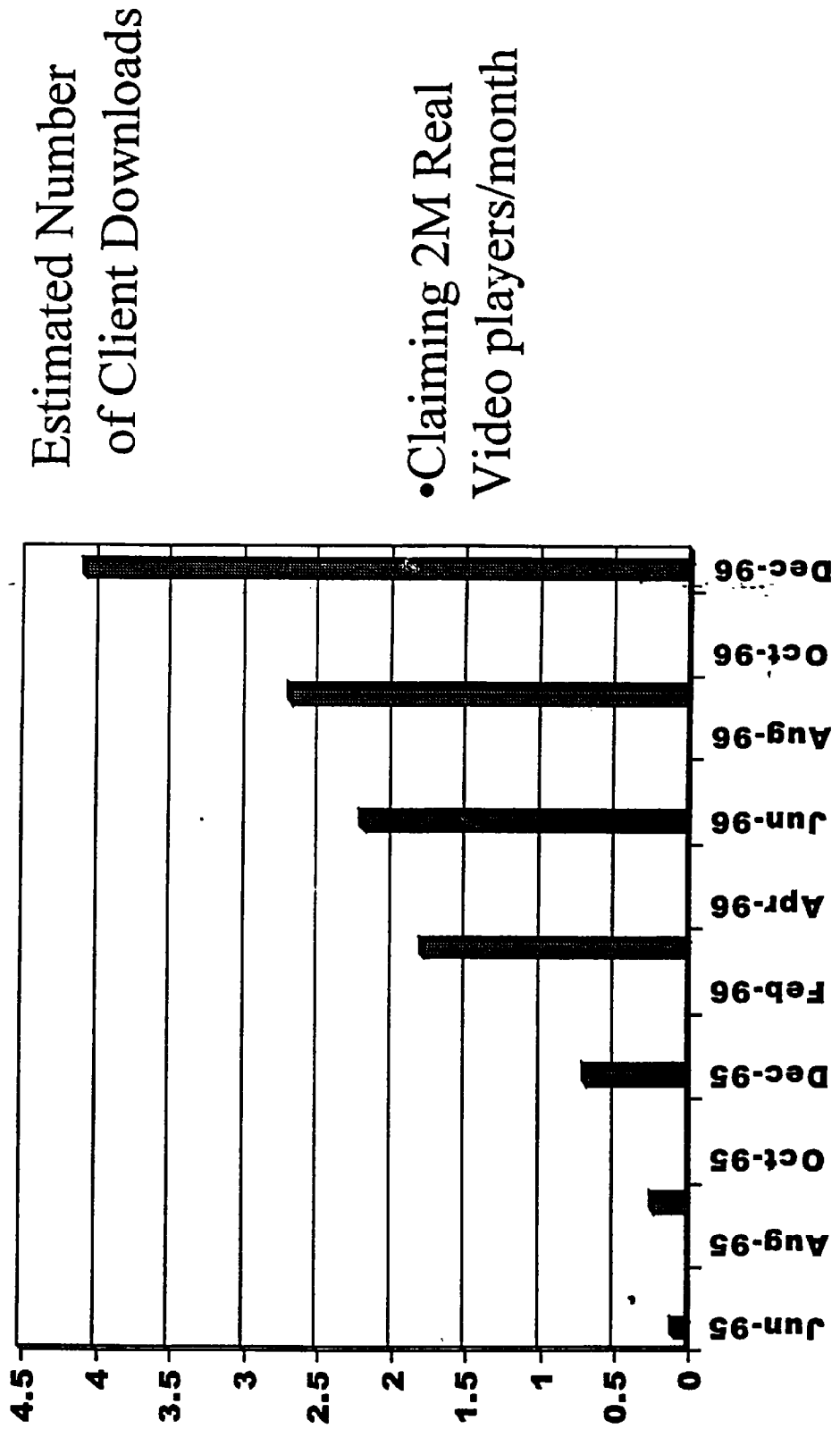
Option #1: Buy PN

- Estimated cost: \$250 million
- Pro's
 - Instant 80% marketshare
 - Very high PR value (though some could be negative)
 - Wealth of content--1700 web sites deploying today
 - Biggest DEDICATED sales force (80+ sales and marketing people alone)
 - Single Transaction
 - PN has good Xplatform story
- Con's
 - Rob & ex-MS employee factor
 - Legal concerns
 - Tough to easily integrate teams
 - Doesn't complete product story--still left with holes in our product strategy
 - Most expensive
 - Drives smaller "best of breed technology" players to NSCP

Progressive Networks Facts

- Privately held, Last Round \$17.9 MM (q4/96)
- VC: Accel Partners
- Revenue estimate \$28.9 MM, \$6.4 Book Value
- 187 employees (250 said at dev con)
 - Chairman/CEO: Rob Glaser
 - President/COO: Bruce Jacobsen
 - VP Software Development: Phil Barrett
- Estimated Purchase Price: \$250mm

Progressive Networks



How Would We Integrate PN If We Acquired Them?

- Get rid of their problematic management preferably as part of deal
 - Glaser, Dunsmuir
- Keep their rational management (assuming they want to stay)
 - Jacobson, Barret
- Do immediate architectural flush of RV vs. NetShow
 - Settle on one file format, probably ASF
 - Move to RTSP
 - Use RV servers for Xplatform, NetShow (likely) for NT server
 - Clients? TBD
- Use acquisition as an excuse to move to only for fee products
- Brand under RealAudio and RealVideo names because of brand equity
- Find high-powered exec to run combined team
 - Moshe Lichtman? Bruce Jacobson?

Option #2: Industry-shaking Acquisitions

- Total price tag: \$110-170 million, with an option to split two ways
- Complete product story by buying best of breed
 - Vxtreme (standards, Xplatform, tools) \$45 to \$70 MM
 - Vivo (tools, codecs) \$40 to \$50 MM
 - Audionet (distrib. Prod., & content) \$15 to \$30 MM
- Codec inventory 3-4 deal, licenses total \$10 to \$20 MM
Rough Estimate \$110 to \$170 MM
- Caveat: Valuations will require more information than is currently publicly available. Next step may be to approach Cisco on their investments in Precept and Vxtreme.

Option #2: Industry-shaking Acquisitions

- Pro's:
 - Best of breed acquisitions accelerate product
 - Increases internal skills
 - No antitrust issues (not market leaders, technology leaders)
 - Sufficient staff and manpower as a result
- Con's:
 - Mgmt bandwidth (Distraction) in integrating
 - Cost
 - Time to realize technologies in product
 - Need to get Cisco bought in, given stake in Vxtreme

Vxtreme Facts

- 70 employees, established 12/95
 - President & CEO Pete Mountanos
 - Chief Scientist & Co-founder Anoop Gupta
 - CTO & Co-founder Navin Chaddha
 - Director, Engineering Prasad Vellanki
- Jan. 7, 1997. Investment By Cisco, Informix and Softbank of more than \$10 million for a minority stake. Ed Kozel of Cisco, Phil White of Informix, and Gary Reischel of SOFTBANK each took board seat.
- Vxtreme was founded in 1995 to develop and market a complete solution for high-quality business video over the Internet. The company's scaleable software-only video solution allows organizations to create and deliver high-quality, real-time Internet video without costly upgrades to existing computers and networks.

VXtreme Facts

- VXtreme, Stanford CA
- Business: Sales of streaming multimedia servers and tools
- Products:
 - Timeline editor for content creation
 - Simple Audio/Video capture tool
 - Streaming media server with dynamic bandwidth adjustment
 - ActiveX client, Netscape plug-in.
- Customers:
 - Hollywood OnLine, CNN Fin, Discovery Chan, Fujitsu, Compaq...
 - Claim evaluation copies in 80 of fortune 200

VXtreme Facts

- Value to Microsoft:
 - Client/Server
 - | already focused on similar feature sets
 - | supports dynamic bandwidth adjustment & retransmit
 - | Industry recognition as best quality solution
 - | Immediate gain of experienced engineers
 - | Xplatform support
 - | Completely standards based
 - Timeline editor
 - | premier NetShow content creation tool
 - Highly motivated to succeed
 - | Environment feel very similar to Microsoft
 - | High activity levels at all hours
 - Strong ties to Stanford
 - | Grad Student work
 - | R&D access

How Would We Integrate Vxtreme If We Bought Them?

- They'd be our "leapfrog team"
 - We'd hand them the source to NetShow v.2 and ask them to implement within 4 months:
 - Unix ASF streaming version
 - Scaleable codec architecture
- We'd integrate their architects and dev managers
 - Into redesigning our product for v.3 to be standards-based and the right architecture with a 12 month goal
- We'd use their tools team to be our tools team (we have none)
- We'd use their sales force and marketing team (we have virtually none)
 - Put them in the field in Bay Area, NY, and LA
- Open issue: would they relocate to WA or would we have to coordinate a Bay Area development team
 - Has pro's and con's

Audionet Facts

- 80 employees, established 1995
- Dallas, TX
- PRESIDENT: Aubertin, Stephen
- Venture Capitalists: Capitol Broadcasting Company, Motorola, Premiere Radio Networks, and certain principals of Hicks, Muse, Tate & Furst Incorporated.
- Business: Streaming solutions provider
- Products:
 - Unicast & Multicast network management
 - End to end streaming solutions
 - Event management
- Value to Microsoft:
 - Ability to handle key streaming events
 - Content deals: MLB, College Basketball, WTA tennis, etc.
 - Infrastructure--headend and nodes
 - Major loss to PN
 - Immediate Conversion of large amounts of content
 - Have purchased ISP multicast traffic EXCLUSIVES

How Would We Integrate Audionet If We Bought Them?

- They'd be our distribution engine
 - Use them to distribute and host both business and internet/high profile content
 - Use them to do content deals with netops and satellite co's
- They'd be our aggregation engine
 - Use them as an aggregation site (ala Timecast or Marimba) to aggregate all NetShow content
- They'd be our content deal engine
 - Currently have multicast traffic, MLB, College Basketball, and other broadcast exclusives. Use them to get more.
 - Unlike MSN, their business model is to take analog media and move it to digital (radio stations, TV stations, etc.)
- We'd add their 500 site customer base to ours
- Would be our broadcast content source
- Would NOT move here

Vivo Facts

- 44 employees, established 1992
- Waltham Mass
- Business: Fast efficient content production tools coupled to codecs
- \$ 5.78 MM est. Revenues (9/12/96)
 - CHAIRMAN: Ericsson, Staffan
 - CEO: Hutcheson, Zenas W III
 - PRESIDENT: Hutcheson,
 - CHIEF SCIENTIST Girod, Professor B
- Products: Vivo Producer, client
- Value to Microsoft:
 - Standards based codec technologies + low overhead codec licenses
 - PictureTel cross licensing (Chromatic, DEC, Picturetel license from Vivo)
 - Fast content production tool already supports ASF
 - MAC and PC support for content tool
 - Good market position in streaming Video world

How Would We Integrate Vivo If We Bought Them?

- They'd be our Tools Team
 - We'd have them take over development of WinASE (or more likely, scrap it)
 - They'd be responsible for implementing the ALL of our features
- We'd add them to our Codec team
 - We need more fuel for our video codec effort, they would provide it
- We'd add their 1700 site customer base to ours
 - First TV, Zif-Davis, CNN, PBS, Cnet, San Jose Mercury News...
- Most of their staff would be in dev, test, pgm
 - They have no sales to speak of, but do have 4-5 management
- We'd need them to move here

Liquid Audio Facts

- Liquid Audio, Redwood City, CA
- Staff: 22
 - CEO: Kearby, Gerry
- Business: Music/Multimedia retail systems for Networks
- Products:
 - Liquifier - content production tool designed to be used at the mastering phase of audio production
 - Streaming server with content encryption and rights reporting
 - Backend content management tools for dynamic content creation and management of huge content libraries
 - Bits to atoms client - writes CD from downloaded content
- Est. 1996 Revenue \$1,500,000
 - VC: Hummer Winblad, (Probably \$1 MM)

Liquid Audio

- Value to Microsoft:
 - Insider experience in audio industry and extensive contacts
 - Data encryption and water marking technologies
 - Focus on key industry segment
 - Content management and dynamic content creation tools
 - Xplatform support
 - Dolby licensee--possible Dolby AC-3 license transfer to Microsoft
 - In depth knowledge in Digital Audio Workstation design
 - Closed deals with major music sites including N2K (Music Blvd, Rocktropolis) and IUMA (Internet Underground Music Archives)
 - Industry leader, gaining momentum

How We Would Integrate Liquid Audio If We Bought Them?

- Integrate their backend data management & encryption/watermarking technology
- Integrate with Audionet to drive content
 - Record label vertical
- Leverage them to seize the lead in encryption and music commerce
 - Security, billing, encryption
- Use to integrate NetShow/Merchant
- Might be a better target for investment not acquisition

Sample Public Companies

Company	52 Week Range	Last 2/28/97	Employees	Net Market Value (millions)	LTM Revenues	Net Market Value /LTM Revenues
White Pine	\$9.63 \$3.63	\$4.75	124	\$16.86	\$11.67	1.44x
Vocaltec	\$15.5 \$3.88	\$6.50	145	\$33.37	\$8.50	3.93x
Voxware	\$8.75 \$2.00	\$4.75	76	\$33.89	\$3.99	8.48x
NetSpeak	In Registration		56	\$77.60	\$0.87	89.5x
8x8	In Registration		91	\$107.00	\$33.32	3.21x

The companies have shown considerable volatility and analysts are expecting an industry shakeout. NetSpeak's and 8x8's IPO filing prices are not necessarily indicative of actual trading price. [8x8 is a hardware codec company.]

Option 2A: JV With Cisco To Do #2

- Pro's
 - Deploying multicast and networked multimedia in the channel will take a serious networking partner
 - Example: MS ITG took 8 months to evaluate, test and deploy multicast
 - Cisco has experienced channel, sales force, and partner base that we can leverage
 - We need Cisco pushing THIS solution, no others
 - Cisco is currently invested in and therefore pushing other companies
 - Precept and Vxtreme
 - Would take serious change to get them to back our solution vs. small companies they are invested in
 - Cisco is completely aligned with us in this area
 - Driving networked multimedia sells more networks
 - Complete solutions are what their customers are asking for
 - Cisco wants to advantage their networks, we want networks that are advantaged
 - Reduces our risk
 - Joint channel, sales force
 - Positive PR
 - Powerful impact in corporate space
 - Great engagement point with Cisco

Option 2A: JV With Cisco

- Cons
 - We want to own code
 - Difficult to pull off
 - PN goes to NSCP?
 - We may be able to get the same response out of Cisco by pushing a marketing partnership rather than a JV
 - Different profit/loss thresholds & timing concerns

How Would We Integrate With Cisco If We JV'd With Them?

- Acquire other companies first
 - Keep price lower
- Create JV with Cisco
 - New company with zero employees holding technology & royalties
 - Or New company with existing employees and technology
- Find senior exec to manage
 - Moshe Lichtman? Robbie Bach? Mark Cuban from Audionet?

Option #3: Turn the dial to "1"

- Spend \$25 million licensing codecs (encode & decode)
- Turn up evangelism several notches
 - Dedicate 3 people in DRG to getting NetShow tools
 - 3 people to NetShow content evangelism
 - 3 people to filling admin, cont. mgmt gaps
- "Buy some friends"
 - \$5 million investment in audionet
 - Get them to move to NetShow, aggregate NetShow content
 - \$5 million grant to Apache and Xing to complete Xplatform story
- Turn up sales several notches
 - Either hire or coopt 50 sales people to sell NetShow pro
- Turn up development several notches to get way ahead of PN
 - 40 more dev., test, pgms to form "leapfrog" team
 - Combine part of existing ActiveMovie team to build standards and tuneable codec version of NetShow

Option #4: Focus on 56.6 and Above

- Focus on "above" internet speeds
- Wait for the market to grow there
- Pro's
 - We can build a great high bit rate case and make progress in corporate accounts
 - We can position others as "unrealistic"
 - We can limit the amount of support we put into this area (resources, investments)
- Cons
 - Every company out there is using the Internet to market for the INTRANET--we'd forego that
 - Unrealistic. Even business focused content providers need to do 28.8
 - Competitors will grow Internet content to Intranets
 - We will force our customers to use multiple solutions (one for Internet, another for intranets)--and give competitors an "In"

Option #5: Cede The Streaming MM Space

- Position NetShow as a systems component only & stop selling against PN/Netscape
 - Redesign so that we provide "data passthrough" for other vendors clients and server
 - This would give us some say over protocols, and POSSIBLY file formats
- Pro's
 - We're on track to do this today :)
 - Would give us some say over wire protocol standards and API's
 - Far less resource commitment (today's would suffice)
 - Far less evangelism (would need to step up a bit more, but not radically)
- Cons
 - Would not give us any say over tools vendors or content
 - PN is positioning themselves in this space today, so unclear that we could reach agreement
 - Miss a revenue opportunity
 - Miss command in an important market
 - Unclear we will win the platform war against PN if they are not on board

Codec Deals: Audio Technologies

- Current Issues
 - Selection criteria for media servers is most frequently audio and video quality
 - Need immediate codec licenses to be competitive
 - We risk getting into a licensing "treadmill" where we pay through the nose every 3-6 months
 - Vulnerable to licensing opportunists
 - Dolby Labs - \$50 million for AC3 license
 - Voxware - \$15 Million for global TwinVQ license

Codec Deals: Audio Technologies

- Phase 1: get competitive \$3 million total
- License full MPEG Layer 3 implementation
 - | Existing license is for 8-24k non-real-time mono only
 - | OPTION 1
 - License 8k to 64k real-time with stereo and no restrictions and create AM Filter \$800k
 - Global decode, global encode to 64k
 - | OPTION 2
 - License 8k to 320k real-time with stereo and no restrictions and create AM Filter if under \$2 million
 - Global decode, global encode to 320k

Codec Deals: Audio Technologies

- Phase 1: continued
 - License Voxware, MetaSound
 - | License 8k to 24k \$700k - 2.7 million
 - Complete current feature set
 - | OPTION 1:
 - Get ACM Encode for NetShow and NetMeeting (\$700k)
 - Get global decode as ACM and AM Filter with no restrictions
 - | OPTION 2:
 - Option future enhancements and global license for MS only products (\$2.7 million)

Codec Deals: Audio Technologies

- Phase 2: Leapfrog
 - Researching options, results in 2 weeks
 - FhG, Germany
 - Staff: Multimedia unit 50 people, company 12,000
 - Multimedia Institute: Audio/video compression and associated technologies
 - Products/Technologies:
 - Audio - MPEG Layer 3, MPEG AAC (Q3 97). MPEG 4 (98), software only and DSP version, large IP base
 - MMP - audio encryption
 - Video - Various standards based technologies

Codec Deals: Audio Technologies

- Phase 2: Leapfrog (continued)
 - FhG, Germany
 - | Local license (NS/NM and full decode): \$2 million/yr
 - Non-directed research, just licensing
 - | Global license: \$6 million/yr
 - Invest \$6 million/year for program to stay 3 to 6 months ahead of everyone
 - Immediate utilization of research
 - Incremental releases before standards completed
 - Global licensing options
 - Directed R&D
 - | Proven track record as world leader
 - | Good working relationship

Codec Deals: Audio Technologies

- Phase 2: Leapfrog (continued)
 - FhG, Germany
 - | Part of EEC (Can participate in EEC sponsored projects)
 - | Heavily involved in EEC Mode (Music On Demand) project
 - Voxware
 - | More Research required
 - | Competent staff all hired within 9 months

Codec Deals: Video Technologies

- Acquisitions in option 2 put us in the lead
- Existing story is pretty good
 - MPEG 4 in our pocket
 - H.263 in Intel's (just license)
- Future Video Technologies
 - Either grow our own Video codec team with Vivo, Vxtreme, and MPEG 4 teams
 - Or fund FhG to build their own video codec team with our MPEG 4 base

Recommendations

- In this order
 - #2, with Cisco co-marketing agreement
 - #2a, with Cisco JV
 - #3, SERIOUS company commitment needed
 - #1, FTC fight. Sub optimal technology choice.
 - #4, longshot
 - #5, Doom
- Codec deals
 - Global licensing options: \$11 million this year, \$6 million ongoing
 - Local (NS/NM only) licensing option: \$3-4 million this year, \$2 million ongoing

Analysis:

- Best for...
 - Content providers: 1
 - Web masters: 1
 - Corporate accounts: 2a
 - ISP's: 2a
 - SP/SI's: 2a
 - NetOps: 2a
 - Consumers: 1
- Most competitive vis a vis:
 - PN: 1,2, 2a
 - Netscape: 1,2, 2a
 - Oracle: 2a
- Most like to succeed at getting 50% or greater market share:
 - 1: short term
 - 2/2a: long term

Managing The Transition From "Free" To "Fee"

- Release NS 2.0 free
 - Gain production customer base
 - Drive ubiquity of ASF & players
 - Ship as part of IE/IIS 4.0
- Use acquisitions as excuse to move to for fee model for v.3
 - "Complete solution"
 - Adds RSVP, adds multiple server configuration, adds cross platform server, adds serious tools, adds rich x-platform tools, services, libraries, etc.
- Brand under "NetShow Pro"
 - Separate SKU & part of bundles (Olympus?)

Backup

	IPO Date	IPO Price	High	Low	2/25/97 Price	Change	Market Value	Market Value /LTM Revenues
CiNet	Jul-96	\$16.00	\$35.75	\$11.75	\$27.00	69%	\$359	34.5 X
E*Trade	Aug-96	10.50	19.75	8.25	20.38	94%	603	8.8 X
Individual	Mar-96	14.00	24.50	8.75	8.00	-43%	114	4.7 X
Internet Services (weighted)						49%	\$1,076	10.5 X
Open Market	May-96	\$16.00	\$42.25	\$11.50	\$13.75	-24%	\$389	17.3 X
Broadvision	Jun-96	7.00	10.38	5.25	8.50	21%	170	15.6 X
CyberCash	Feb-96	17.00	64.75	12.25	14.88	-13%	159	1,590.3 X
OneWave	Jul-96	16.00	21.50	2.25	2.63	-84%	39	3.0 X
Internet Infrastructure						-29%	\$757	16.2 X
Yahoo	Apr-96	\$13.00	\$43.00	\$15.50	\$31.75	144%	\$841	44.1 X
Excite	Apr-96	17.00	21.63	5.00	15.50	-9%	186	12.6 X
Lycos	Apr-96	16.00	29.25	5.75	20.50	28%	283	21.9 X
Open Text	Jan-96	15.00	20.50	4.13	9.88	-34%	163	12.3 X
Search Engines						45%	\$1,473	24.6 X
Raptor Systems	Feb-96	\$15.00	\$39.25	\$12.75	\$14.00	-7%	\$183	12.6 X
CheckPoint	Jun-96	14.00	36.25	13.25	21.13	51%	691	21.7 X
Secure Computing	Nov-95	16.00	38.25	5.63	6.13	-62%	91	2.3 X
Firewalls						8%	\$965	11.1 X
CompuServe	Apr-96	\$30.00	\$35.50	\$8.63	\$10.03	-67%	\$929	1.1 X
Netcom On Line	Dec-94	13.00	44.50	10.25	9.81	-25%	114	0.9 X
Earthlink	Jan-97	13.00	22.50	13.00	16.25	25%	159	7.3 X
America Online			71.00	22.38	36.75		3,455	2.5 X
PSINet	May-95	12.00	19.38	6.75	8.50	-28%	341	3.8 X
BBN Corp			34.75	15.63	20.50		430	1.5 X
Internet Access						-27%	\$5,428	2.0 X
Grand Total (weighted)						-13%	\$9,700	3.2 X

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Why NetShow Can't Use ActiveMovie

- | NS v.2 has ~80 properties not included in AM
- | AM not good at handling network-based servers
- | No AM Xplatform/Xbrowser story
- | AM good at simple audio & video, lousy at mixed media (estimated 10x code under AM to do what we do today with NS client for far less)
- | Too much thread overhead in AM
- | No time--schedule for NetShow is April and again in June
- | Single, monolithic client is too large